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3 LASER-BASED ACOUSTO-OPTIC UPLINK COMMUNICATIONS TECHNIQUE

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5 ABSTRACT OF THE DISCLOSURE

6 An apparatus for enabling acousto-optic communication
7 comprising an in-water platform comprising means for emitting an
8 acoustic signal to an acousto-optic interaction zone, an in-air
9 platform comprising the ability for transmitting a first optical
10 interrogation beam, the ability for receiving a portion of the
11 first interrogation beam and a second laser beam formed from the
12 reflection of the first interrogation beam off of the acousto-
13 optic interaction zone, the ability for measuring and outputting
14 a plurality of optical interferences between the portion of the
15 first interrogation beam and the second reflected beam, and a
16 signal converter receiving as input the plurality of optical
17 interferences and outputting an electrical signal representing
18 the received acoustic telemetry signal at the interrogation
19 point at the air-water interface.